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April 7, 1988

Lee M. Thomas, Administrator
U.S. Environmental Protection Agency
Room W1200
401 M Street, S.W.
Washington, D.C. 20460

Dear Administrator Thomas:

On behalf of the Province of Ontario, its Attorney General, its Minister of the Environment, and Michael B. Vaughan, we are hereby filing a petition for rulemaking under Section 115 of the Clean Air Act, 42 U.S.C. 7415. The exhibit references in the petition are to the joint volume of supporting exhibits filed today with the related petition for rulemaking by the State of New York, et al.

Sincerely,

James M. Hecker

Bruce J. Terris
James M. Hecker

Enclosures

BEFORE THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO, IAN G. SCOTT, Q.C., ATTORNEY GENERAL FOR ONTARIO, JIM BRADLEY, MINISTER OF THE ENVIRONMENT OF THE PROVINCE OF ONTARIO, AND MICHAEL B. VAUGHAN,

Petitioners,

v. EPA Docket No. _____

LEE THOMAS, ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

PETITION FOR RULEMAKING

This is a petition for rulemaking pursuant to Section 553(e) of the Administrative Procedure Act (APA), 5 U.S.C. 553(e). Petitioners Her Majesty the Queen in Right of Ontario, Ian G. Scott, Q.C., Attorney General for Ontario, Jim Bradley, Minister of the Environment of the Province of Ontario, and Michael B. Vaughan[1/] request the Administrator of the U.S. Environmental

1/ Petitioner Her Majesty the Queen in Right of Ontario is the legal designation for the government of the Province of Ontario, Canada.

Petitioner Ian G. Scott, Q.C., is the Attorney General for Ontario. He has supervisory authority over all litigation brought on behalf of Her Majesty regarding Ontario.

Petitioner Jim Bradley is the Minister of the Environment of the Province of Ontario. He has been assigned "the supervision of all surface waters and ground waters in Ontario." Ontario Water Resources Act, Revised Statutes of Ontario, 1980, Chapter 361, Subsection 15(1). He is empowered to take action in the courts to restrain the discharge or deposit of material into water courses that may impair the quality of the water. Id., Subsection 15(3) and Section 56. Petitioner Bradley also administers the Environmental Protection Act, the purpose of which is to provide for the protection and conservation of the natural environment, including the air, land and water of the Province of Ontario. Environmental Protection Act, Revised

(continued...)

Protection Agency (EPA) to issue a rule under Section 115 of the Clean Air Act, 42 U.S.C. 7415. That Section provides, in pertinent part:

> (a) Whenever the Administrator, upon receipt of reports, surveys, or studies from any duly constituted international agency has reason to believe that any air pollutant or pollutants emitted in the United States cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country * * *, the Administrator shall give formal notification thereof to the Governor of the State in which such emissions originate.
>
> * * *
>
> (c) This section shall apply only to a foreign country which the Administrator determines has given the United States essentially the same rights with respect to the prevention or control of air pollution occurring in that country as is given that country by this section.

Petitioners request the Administrator to reaffirm and promulgate the following endangerment finding under subsection (a) of Section 115:

> The Administrator has reason to believe, based on the receipt of the October 1980 Seventh Annual Report on Great Lakes Water Quality of the International Joint Commission (IJC), the Work Group Reports issued

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1/(...continued)
Statutues of Ontario, 1980, Chapter 141, Sections 1 and 2. He also has injunctive powers under that act with respect to the protection of the natural environment. Id., Subsection 144(1).

Petitioner Michael B. Vaughan is an Ontario resident. See attached Affidavit of Michael B. Vaughan. He owns a cottage on Lake Rosseau in the Muskoka region of Ontario. He uses the cottage as a summer home and the lake for recreational activities. He has observed a number of changes at his cottage and in the lake environment due to acid rain. These include government restrictions on the consumption of fish caught in, and the drinking of water piped from, the lake, damage to a number of exterior surfaces on his boat and at his cottage, such as boat decks and docks, and the disappearance of several varieties of wildlife. These changes have adversely affected his aesthetic, environmental, economic and cultural interests.

(1987). In that report, the IJC found (Joint Exhibit C,[2/] pp. 50, 53, 55):

> Virtually all of eastern Canada and portions of the northeastern United States experience rains with acidity equal to or exceeding that which can adversely affect susceptible ecosystems. All parts of the Great Lakes watershed are now receiving precipitation containing 5 to 40 times more acid than would occur in the absence of atmospheric emissions. Many inland lake ecosystems in the most susceptible parts of the Basin may be irreversibly harmed within 10-15 years.
>
> * * *
>
> [A] substantial portion of the Great Lakes drainage basin is potentially susceptible to acidic precipitation, based on its bedrock geology. The Sudbury, Muskoka and Haliburton areas of Ontario and the Adirondacks of northern New York are among the most heavily impacted areas in the world because their geology offers little buffering capacity to their inland lakes. Some lakes in the Haliburton-Muskoka area have lost 40-75 percent of their acid neutralizing capacity in a decade or less. These areas are now being subjected to precipitation which is twice as acidic as that which caused losses of major fish stocks in thousands of Scandinavian lakes.
>
> * * *
>
> The primary sources of the atmospheric emissions of sulphur and nitrogen oxides are the burning of fossil fuels (in manufacturing, heating homes and transportation), and the smelting of rich ores. The burning of coal by electrical utilities accounts for over half of the sulphur dioxide emitted in the United States, while in Canada the non-ferrous smelting industry is the major source of sulphur dioxide. Fuel combustion by factories, power plants and motor vehicles is the major source of nitrogen oxide emissions in the United States while motor vehicles are the primary source in Canada.
>
> * * *

2/ Exhibit references are to the joint volume of supporting exhibits filed with the related petition for rulemaking by the State of New York, et al.

> [T]he significance of atmospheric pollution to Great Lakes water quality as reported by the Great Lakes Water Quality and Science Advisory Boards, compel the Commission to advise the Governments of the extent and possible consequences of the acid rain problem to the Great Lakes Basin ecosystem. * * * The Commission recommends that the Governments of the United States and Canada consult in a timely manner on appropriate actions to substantially reduce atmospheric emissions of sulphur and nitrogen oxides from existing as well as new sources, and that the Governments ensure that adequate, comprehensive research programs are underway to provide information on the cause, effects on the ecosystem and measures for the control of the long-range transport of airborne pollutants, with special attention in the near future to acid rain.

These statements are clearly sufficient to provide the Administrator with reason to believe that air pollutants emitted in the United States cause or contribute to air pollution, in the form of acid deposition, which may reasonably be anticipated to endanger public health or welfare in Canada.

Indeed, EPA has already made such a finding of endangerment based on this same IJC report. In a January 13, 1981, letter to former Secretary of State Edmund Muskie, former Administrator Costle stated that he had reviewed the Seventh Annual Report on Great Lakes Water Quality issued in October 1980 by the IJC. Administrator Costle concluded that this report "confirms that acid deposition is endangering public welfare in the United States and Canada and that United States and Canadian sources contribute to the problem not only in the country where they are located but also in the neighboring country." Joint Exhibit B, p. 1488. In his January 13, 1981, letter to Senator Mitchell, which was included in his letter to Secretary Muskie, Administrator Costle elaborated on this conclusion and stated

(id. at 1489):

> * * * EPA has concluded that acid deposition, often referred to as acid rain, presents a genuine threat to our environmental well-being both in the U.S. and Canada. What we know or suspect about acid deposition indicates that the problem is genuine and serious:
>
> --acid deposition can and has destroyed lake and stream ecosystems, killing fish and other water life;
>
> --many lakes in Canada and the United States are already acidified and their fish populations are shrinking or are extinct;
>
> --some soils are being damaged over time due to leaching of minerals and nutrients;
>
> --the water and soils over extensive areas in North America are susceptible to acidification;
>
> --stone buildings, monuments, and other building materials are eroded more rapidly by acid deposition;
>
> --some important crops may be damaged by acid deposition and others may be injured by acidified soils;
>
> --growth of forests may be reduced over time;
>
> --over the long term some drinking water supplies may be contaminated by toxic metals leached from the soil as a result of acid deposition.
>
> These kinds of impacts are within the range of impacts covered by Section 115 * * *.
>
> The stress to our ecosystems created by acid deposition is a function of the total atmospheric loadings of sulfur and nitrogen compounds. Surveys conducted over the past several years establish that there is a significant flow of these pollutants across the U.S.-Canadian border in both directions. Thus, we can say with some certainty that emission sources in the United States contribute significantly to the atmospheric loadings over some sensitive areas in Canada * * *.
>
> These statements satisfy all the requirements of an

endangerment finding under subsection (a) of Section 115. They were based on the receipt of a report from a duly constituted international agency, the IJC. Administrator Costle stated his belief that air pollutants emitted in the United States are contributing significantly to air pollution in Canada. He even went beyond the statutory requirement by stating that "acid deposition is endangering public welfare" in Canada, not just that such endangerment "may reasonably be anticipated" to occur.

EPA has never revoked this endangerment finding. None of the statements of subsequent Administrators and EPA staff have challenged the factual basis for Administrator Costle's determinations or suggested that those determinations were erroneous.

On the contrary, an April 21, 1981, memorandum from Lydia N. Wegman, Assistant General Counsel for EPA's Air, Noise and Radiation Division, to David E. Menotti, Associate General Counsel for EPA's Air, Noise and Radiation Division, stated (p. 1) that "Administrator Costle made some findings needed to take action under Section 115 * * *." In her September 22, 1981, letter to Ohio Governor James A. Rhodes, Administrator Anne Gorsuch stated that Administrator Costle had expressed his "belief that some preconditions to action under Section 115 had been met." Similarly, Administrator William D. Ruckelshaus stated in his March 13, 1984, letter to Robert Abrams, Attorney General of the State of New York, that (p. 2) Administrator Costle "may have made some of the findings that are necessary" to

a Section 115 proceeding. In addition, in 1983, EPA staff members prepared briefing documents for Administrator Ruckelshaus identifying various regulatory options under existing law to control acid deposition. Those documents stated (Joint Exhibit G, Briefing Document on Acid Deposition, Appendix II, p. 23):

> Two steps are required before Section 115 can be used to require SIP tightening: (1) EPA or the Secretary of State must make a determination of causation (or contribution) between a State's emissions and endangered health or welfare in Canada; and (2) EPA must determine that Canada affords the U.S. reciprocal rights. While EPA has no regulations to articulate Section 115, the prior Administration made an initial determination of causation. [emphasis added]

In litigation to compel EPA to implement these findings, the United States Department of Justice never denied that an endangerment finding has been made. In its brief in the district court, the United States stated that "Mr. Costle finds that the cumulative effects of Canadian and U.S. emissions are creating a risk of public harm in Canada" (emphasis in original). Memorandum in Opposition to Plaintiffs' Motion for Summary Judgment and in Support of Defendant's Motion to Dismiss and for Summary Judgment, p. 29, filed May 30, 1984, in State of New York v. Ruckelshaus, D.D.C., Civil No. 84-0853. In its brief in the court of appeals, the United States stated that Administrator Costle's letters "point[ed] out the existence of a general transboundary flow of pollutants across the United States-Canada border, leading to adverse effects in both countries." Brief for the Administrator, United States Environmental Protection Agency, p. 20, filed February 11, 1986, in State of New York v. Thomas,

D.C. Cir., Nos. 85-5970, 85-5972, and 85-5994. In its May 1987 brief in the Supreme Court opposition to the petitions for a writ of certiorari, the United States stated that "Costle's successors--Administrators Gorsuch, Ruckelshaus, and Thomas--have consistently interpreted his statements in 1981 as tentative or partial conclusions regarding the preconditions for a Section 115 proceeding," but failed to deny the accuracy of those conclusions. Brief for the Federal Respondent in Opposition, p. 15, State of New York v. Thomas, Sup. Ct. Nos. 86-1373, 86-1374. Indeed, the United States admitted that "[t]he acid deposition phenomenon * * * is a problem in both the United States and Canada" and is "a serious concern affecting bilateral relations." Id. at 4, 6.

2. The Work Group Reports Pursuant to the August 1980 U.S./Canada Memorandum of Intent Concerning Transboundary Air Pollution

On August 5, 1980, the United States and Canada signed a Memorandum of Intent "to develop a bilateral agreement on transboundary air pollution including the already serious problem of acid rain." Joint Exhibit A. In that memorandum, both governments recognized that acid rain "involves the flow of air pollutants in both directions across the international boundary." Ibid. The Memorandum established five technical working groups to assist negotiations for a bilateral agreement to remedy this transboundary air pollution. The Memorandum provided that these work groups "shall function under the general direction and policy guidance of a Canada/United States Coordinating Committee

co-chaired by the [Canadian] Department of External Affairs and the [U.S.] Department of State." Id., Annex, Work Group Structure for Negotiation of a Transboundary Air Pollution Agreement, p. 1. Consequently, these work groups are a "duly constituted international agency" within the meaning of Section 115.

The November 1982 Final Report of Work Group 2 on Atmospheric Sciences and Analysis found (Joint Exhibit D, pp. 11-1, 11-4):

> Acid rain occurs in eastern North America within and downwind of the major source regions of oxides of sulfur and nitrogen. This geographical association between the region of the largest North American emissions of sulfur and nitrogen oxides and the region of the largest wet deposition of sulfur and nitrogen acids constitutes the strongest evidence of an anthropogenic origin for much, if not most, of the acidic deposition in the northeastern U.S. and eastern Canada. Furthermore, there is no doubt that polluted air can readily cross the Canada-United States border in either direction.
>
> * * *
>
> Results derived from simple climatological analyses indicate that about three to five times more sulfur flows north, from the U.S.A. to Canada, than south. The ratio of the U.S.A. to the Canadian emissions of sulfur is almost six to one.
>
> * * *
>
> Deposition values at the more remote pristine locations in eastern Canada and in other remote areas worldwide clearly cannot be attributed to local sources, which are negligible, and demonstrate the reality of a long range transport component.

The January 1983 Final Report of Work Group 1 on Impact Assessment found (Joint Exhibit D, p. 1-9):

> * * * [A]cidic deposition has caused long-term and

> short-term acidification of sensitive (low alkalinity) surface waters in Canada and the U.S. The Work Group concludes on the basis of our understanding of the acidification process that reductions from present levels of total sulphur deposition in some areas would reduce further damage to sensitive (low alkalinity) surface waters and would lead to eventual recovery of those waters that have already been altered chemically or biologically * * *.

These statements clearly confirm the Administrator's prior finding that air pollutants emitted in the United States cause or contribute to air pollution, in the form of acid deposition, which may reasonably be anticipated to endanger public health or welfare in Canada.

3. The January 1986 Joint Report of the Special Envoys on Acid Rain

In March 1985, President Reagan and Prime Minister Mulroney each agreed to appoint a Special Envoy to examine the acid rain issue. Because these envoys were charged by their respective heads of government with the joint review of an environmental issue affecting both nations, they qualify as a "duly constituted international agency" under Section 115. In their January 1986 report, the Special Envoys made the following findings (Joint Exhibit H, pp. 1, 6):

> Over the past two decades, scientists and government officials on both sides of our border have become aware of the serious environmental problems associated with airborne pollutants transported long distances. The most serious of these problems is acid rain. Although we do not understand all the mechanisms of acid rain's formation and transport or the full extent of its effects, it is clear that those causes and effects are shared by both countries. Air emissions from sources in both the United States and Canada have significantly increased the deposition of sulfates and nitrates on both U.S. and Canadian ecosystems.

* * *

The two most important things we learned can be stated simply:

> Acid rain is a serious environmental problem in both the United States and Canada. Acidic emissions transported through the atmosphere undoubtedly are contributing to the acidification of sensitive areas in both countries. The potential for long-term socioeconomic costs is high.
>
> Acid rain is a serious transboundary problem. Air pollutants emitted by sources in both countries cross their mutual border, thus causing a diplomatic as well as an environmental problem. [emphasis in original]

These statements clearly confirm the Administrator's prior finding that air pollutants emitted in the United States cause or contribute to air pollution, in the form of acid deposition, which may reasonably be anticipated to endanger public health or welfare in Canada.

In March 1986, President Reagan stated that he "endorses fully the Joint Report of the Special Envoys." 22 Weekly Comp. Pres. Docs. 388-389. Consequently, President Reagan has also found that an endangerment finding is appropriate.

4. The February 27, 1987, Joint Report to the Bilateral Advisory and Consultative Group (BACG)

In 1987, the U.S. National Acid Precipitation Assessment Program (NAPAP) issued an Interim Assessment on the Causes and Effects of Acidic Deposition. The Executive Summary of that report stated (p. 1-6):

> No attempt has been made in this report to review effects of acidic deposition in Canada; a joint report (Bilateral Advisory and Consultative Group, 1987) that includes that information has been issued recently, and

> cooperative research projects between United States and Canada are in progress. The Canadian emissions data are compared with those for the United States in Chapter 1 and the results from the cooperative monitoring networks are described in Chapter 5.3/

The Bilateral Advisory and Consultative Group (BACG) referenced in this statement is a "duly constituted international agency" within the meaning of Section 115. President Reagan and Prime Minister Mulroney established the BACG in June 1986 "to pursue the work of the Special Envoys and to report to the President and the Prime Minister." Joint Exhibit O, February 25, 1987, Joint Report to the Bilateral Advisory and Consultative Group (BACG), Introduction, p. 1. To prepare for its December 1986 meeting, the BACG asked the national research coordinating organizations, the Canadian Federal-Provincial Research and Monitoring Coordinating Committee (RMCC) and the U.S. NAPAP "to report to them on new scientific findings, current research programs, and joint U.S.-Canadian projects." Ibid.

In its February 25, 1987, report, the RMCC and NAPAP made joint findings "which have become available since or [were] not described in the Lewis-Davis [Special Envoys] report" and "which can be accepted by both the RMCC and NAPAP." Joint Exhibit O,

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3/ The detailed plots of Chapter 5 confirm that portions of southern Ontario receive acid deposition at the highest observed rates in North America (Section 5.6.4.1):

> The spatial distribution of wet deposition and the limited data on dry deposition suggest maximal total annual deposition (wet + dry) of sulfur, probably in excess of 60 kg sulfate ha^{-1} in some rural locations, may occur over eastern Ohio, western Pennsylvania, northern West Virginia, and southern Ontario.

New Findings, p. 1. One of those findings concerns the aquatic effects of acid rain on lakes in eastern Canada (New Findings, p. 12):

> Analysis of surface water chemistry based on data from about 8000 lakes shows the extensive deficit of alkalinity * * * in lakes from western Ontario eastward and south of 52 degrees latitude. The areas of greatest alkalinity deficit correspond to the areas of greatest sulfate deposition. The deficit of alkalinity has been shown to result from the presence of sulfates. Organic acids have been ruled out as the dominant contributors to the acidification process.

Another of those findings concerns the effects of acid rain on materials (New Findings, p. 19):

> Observed corrosion and deterioration of materials in the structural environment, including structures important to our cultural heritage, which as such should be preserved, can in part be attributed to acidic deposition. The primary effect of acidic deposition is to accelerate naturally occurring decay processes.

These statements confirm the prior findings described above and provide the Administrator with additional reason to believe that air pollutants emitted in the United States cause or contribute to air pollution, in the form of acid deposition, which may reasonably be anticipated to endanger public health or welfare in Canada.

B. BOTH FORMER ADMINISTRATOR COSTLE AND PRESENT ADMINISTRATOR THOMAS HAVE MADE A FINDING OF RECIPROCITY

In his January 13, 1981, letter to former Secretary of State Muskie, former Administrator Costle reviewed amendments to the Canadian Clean Air Act which were approved on December 17, 1980. House of Commons Bill C-51, An Act to Amend the Clean Air Act, 1st Sess., 32d Parliament, 29 Eliz. II 1980. Administrator

Costle stated in this letter (Joint Exhibit B, p. 1486) that those amendments "provide[d] the Canadian federal government with authority to abate emissions from Canadian sources which contribute to transboundary air pollution." He then concluded (id. at 1487):

> After consultation with the Department of State, I have concluded that the Canadian legislation provides the Government of Canada with authority to give the United States essentially the same rights as Section 115 of the Clean Air Act gives to Canada.

On October 22, 1985, Administrator Thomas issued a "Determination as to Reciprocity under Section 115(c) of the Clean Air Act," in which he concluded (Joint Exhibit M, p. 1):

> We find that Canadian law does meet the requirements of section 115 in that it provides the Canadian Government with authority to impose a control framework very similar to the framework that might result from implementing section 115. Accordingly, at this time the requirements of section 115(c) have been met.

In its brief in the court of appeals in State of New York v. Thomas, supra, the United States stated that Administrator Thomas had found that the reciprocity requirements of Section 115(c) had been met "at this time." Brief for the Administrator, United States Environmental Protection Agency, D.C. Cir., Nos. 85-5970, 85-5972, 85-5994, p. 19, n. 6. Ibid.

There have been no changes in the Canadian Clean Air Act since the Costle and Thomas reciprocity findings were made. However, Canada and Ontario have taken several unilateral steps since that time to reduce transboundary pollution.

In March 1984, Federal and Provincial Ministers of the Environment agreed that Canada would reduce its SO_2 emissions

from the 1980 base level by 50% by 1994. Joint Exhibit H, Joint Report of the Special Envoys on Acid Rain, January 1986, p. 38. In early 1985, the Environment Ministers recommended and agreed to an initial interprovincial allocation of most of the reductions needed to meet this target. Ibid.

In order to carry out the agreement, Ontario established regulations in December 1985 to implement reductions. The regulations, which go beyond Ontario's commitment of early 1985, require four corporations, which together account for almost 80 percent of Ontario's SO_2 emissions, to reduce their emissions by more than 65% by 1994 so that Ontario's total SO_2 emissions will be reduced from 2,194,000 to 885,000 metric tons per year by that date. Joint Exhibit F, Joint Report of the Special Envoys on Acid Rain, January 1986, p. 39. The Province of Quebec has enacted a similar program that will reduce emissions from 1,085,000 to 597,000 metric tons per year by 1990, a reduction of 45% in a shorter time frame. Ibid. Thus, the two provinces which together account for three-fourths of eastern Canadian SO_2 emissions have instituted stringent controls.

Consequently, it is clear that the reciprocity requirements of Section 115(c) have been satisfied and EPA should issue a rule making such a finding.

II

EPA SHOULD GRANT THE PETITION AND ISSUE A PROPOSED RULE WITHIN THE NEXT 60 DAYS

Section 555(b) of the APA, 5 U.S.C. 555(b), provides that "* * * within a reasonable time, each agency shall proceed to

conclude a matter presented to it." In the circumstances of this petition, we submit that a reasonable time for granting the petition and publishing a proposed rule in the Federal Register is 60 days after receipt of this petition.

As we have demonstrated above, four reports issued by duly constituted international agencies confirm that acid deposition from sources in the United States is endangering Canada. The 1980 IJC report formed the basis for an endangerment finding by former Administrator Costle in 1981. That finding has never been revoked by subsequent Administrators or questioned by the U.S. Department of Justice in related litigation. In addition, the 1986 Special Envoy report made a finding of endangerment which was fully endorsed by President Reagan. Since the fact of endangerment has already been acknowledged at the highest levels of the U.S. government, no prolonged deliberations on this issue are necessary or appropriate.4/

Similarly, both former Administrator Costle and present Administrator Thomas have determined that the reciprocity requirements of Section 115(c) have been satisfied. That

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4/ Petitioners do not seek in this petition for EPA to identify responsible sources or states, or to prescribe emissions reductions or other remedial actions. Those tasks are part of the separate notification and SIP revision processes. EPA's Acting Assistant Administrator of the Office of Air and Radiation stated in a September 9, 1985, affidavit filed in State of New York v. Thomas, D.D.C., Civil No. 84-0853, para. 10, that EPA would provide an additional opportunity for public comment prior to the issuance of notices to responsible states under Section 115. In addition, public notice, an opportunity for public comment, and a hearing must be provided before a revised SIP can become effective. 42 U.S.C. 7410, 7607.

determination has been accepted by the U.S. Department of Justice. There is therefore no reason for any further deliberations on this issue.

For these reasons, petitioners request that EPA act upon this petition within the next 60 days by publishing the appropriate endangerment and reciprocity findings in the Federal Register as proposed rules.

Respectfully submitted,

James M. Hecker

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Attorneys for Petitioners

April 7, 1988

AFFIDAVIT

I, MICHAEL B. VAUGHAN, Q.C., of the Municipality of Metropolitan Toronto, in the Judicial District of York, Lawyer, MAKE OATH AND SAY THAT:

1. I have been a citizen of Canada and a resident of the Province of Ontario all my life. I have worked as a lawyer in Toronto for approximately twenty years where I am a partner in a law firm.

2. I own a cottage on Lake Rosseau in the Muskoka region of Ontario, about 150 miles north of Toronto. My family has owned property in this area since about 1882.

3. I have used a cottage at the lake as a summer home all my life, and presently spend about three weeks at the cottage each summer. During that time, my family and I use the lake for water sports, including swimming, sailing and rowing. I own a number of boats for these purposes.

4. I am the Past President and a current Director of the Muskoka Lakes Association, which was formed in 1894 to advance the environmental, recreational and property interests of lake residents. The Association currently has 3,000 member families, representing 15,000 to 20,000 individuals.

5. I have been informed by government officials that testing during the last five years at a monitoring station near Lake Rosseau has indicated that the pH of rainfall in the area often ranges between 3 to 4 standard units. During the past ten years, I have observed a number of changes at my cottage and in the lake environment due to acid rain.

6. About nine years ago, the Ontario government began issuing a directive advising residents to limit severely their intake of fish caught in lakes in Muskoka because acidity in the lakes was causing increased concentrations of mercury in the fish. As a result, I have discontinued fishing in Lake Rosseau.

7. Until four years ago, my family obtained all our drinking water directly from Lake Rosseau. At that time, the Ontario government issued a directive advising that our waterline should be flushed out after lengthy periods of non-use because the acidity in the

water leaches lead and copper from the pipes and causes toxic concentrations in the tap water. As a result, we now no longer drink tap water. Instead, we buy bottled water and transport it to the cottage at considerable cost and inconvenience.

8. Acid rain has damaged a variety of outdoor surfaces at my cottage. The varnish on my boat decks which costs $1,000 to $1,200 per boat to refinish, now lasts a substantially less period of time than before. The life span of my cedar dock has also been reduced, requiring me to cover it with a protective stain to preserve it longer. The chrome on my boats is pitted. The cedar deck of my home is more frequently covered with moss, which is very slippery when wet and must be periodically removed by scrubbing.

9. I have noticed a definite decline in wildlife at the lake over the years. Wildlife which were once abundant such as crayfish, polywogs, bullfrogs, turtles have disappeared.

10. I have also noticed that the lake is becoming less attractive. A brown slime is beginning to cover underwater objects to a degree which is much more apparent now than it was twelve years ago. I am familiar with the lakes in other areas where this condition is more advanced, and they appear dead and unattractive. If Lake Rosseau were to decline in this manner in the future, I would use my cottage less often, and might be deterred from using it at all.

11. The changes I have observed at Lake Rosseau are disturbing in more than an aesthetic, environmental and economic sense. In Ontario, cottaging in the lake country is an essential part of our cultural heritage. The time frame for these activities is measured not in years, but in generations. The summer cottage is a gathering point for up to four generations of families who have used the same location throughout their lives. The damage caused by acid rain sullies these activities and makes the entire experience less friendly, less humane, and less enjoyable.

SWORN before me at the)
Municipality of Metropolitan)
Toronto in the Judicial)
District of York, this 6th)
day of April 1988.)

A Notary Public

MICHAEL B. VAUGHAN